University of Wisconsin-Stevens Point
Physics and Astronomy
Engineering Statics — PHYS 220
2016 Fall

Course Information

- **Course title:** Engineering Statics — PHYS 220
- **Instructor:** Palash Banerjee
- **Contact:** B125 Science, x–4187, palash.banerjee@uwsp.edu.
- **Office hours:** I will be in my office MTW from 2 – 3 p.m. and on Thursday from 1 – 2 p.m. guaranteed. I am also available at other times, either right after class or otherwise by appointment. I am interested in your success so please come and see me as many times you wish.
- **Pre-requisites:** Physics 240 *is* required.
- **Required:**
  1. Textbook: *"Vector mechanics for Engineers"*, Beer, Johnston, Mazurek and Cornwell, tenth edition, McGraw-Hill.
  2. Calculator: You must have a scientific calculator. A cell phone or smart phone is not a scientific calculator and I will *not* allow you to use such devices in the exam.
- **Course description:** This is a first course in engineering mechanics that deals with the methods used to analyze the equilibrium of rigid bodies and extended structures. Much of this analysis will be based on using the language of vectors and the concept of a force. The emphasis will be on using a few simple, well understood physics principles to analyze a class of important engineering problems.
- **Classroom times:** All classes are held in the Science building.
  - **Lectures:** Mon, Wed & Fri 1 pm – 2 pm in A109.
- **Homeworks:** I will assign homework once a week, typically on a Friday. Your written solutions will be due one week later in class. You may discuss the concepts and ideas with each other as you solve the homework problems but you *may not* copy each others' work. Homeworks count for 20% of your grade.
- **Exams:** There will be *three* midterm exams during the semester not counting your final exam. These exams will be held in the evening from 7 – 9 pm in A109. Each midterm counts for 20% of your grade. The final exam is comprehensive and counts for 20% of your grade. Overall, your exams determine 80% of your grade.
- **Academic misconduct:** As a student at UWSP, I expect you to be familiar with the following document: `http://www3.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf`, especially Section 14.03. Simply put, *do not* copy each others homework, lab reports and exams and pass them off as your own. Any confirmed incidence of academic misconduct, including plagiarism and other forms of cheating will be treated seriously and in accordance with University policy.

General Course Policies

- Make-up work will only be accepted in the case of excused absences. Excused absences include death in the immediate family, illness with a note from the appropriate health care professional, religious observance, an event in which you officially represent the University of Wisconsin-Stevens Point and the event directly conflicts with an exam or lab. Excused absences must be approved with documenting materials prior to the date of absence.
- I will drop the lowest homework score. *All* the exams count. If you miss any exam, you will receive a zero for that exam.
- The schedule for the finals is set by the University. I will not schedule an early final exam for whatever reason. Please don't ask.
- I *do not* assign work for extra credit. There are *no* bonus points that you can earn.
- **Once you hand in your final exam, there is nothing more you can do to change your grade**.

Grading and Evaluation

I will calculate your grade based on a weighted percentage of your scores as follows:

Assignment	Value
Homeworks	20%
Exams (3 midterms, 20% each)	60%
Final examination, comprehensive	20%

Your final grades will be determined as follows:

Total score	Grade
93% and above	A
90–92%	A-
87–89%	B+
83–86%	B
80–82%	B-
77-79%	C+
73–76%	C
70–72%	C-
67–69%	D+
60–66%	D
below 60%	F

I do *not* grade on a curve. Scores will be rounded up according to the following example: 86.6 – 86.9% will be rounded up to 87% and become a B+, but 86.0 – 86.5% will remain at 86% and will earn a B.

Tentative Course Schedule

The tentative course schedule is as follows. This might change and I will try my best to announce changes beforehand.

Week of	Topic (lecture)	
(1): Sept 4	Ch 2: Statics of particles; vector methods	
(2): Sept 11	Ch 2: (continued) Ch 3: Rigid bodies; vector product, moment of a force, Couple.	
(3): Sept 18	Ch 3: (continued)	
(4): Sept 25	Ch 4: Equilibrium of rigid bodies; Free-body diagram. reaction forces, Midterm 1, Thu Sept 29, 7 - 9 pm, A109	
(5): Oct 2	Ch 4: (continued)	
(6): Oct 9	Ch 5: Distributed forces; center-of-gravity, centroids and first moments	
(7): Oct 16	Ch 5: (continued)	
(8): Oct 23	Ch 6: Analysis of structures; trusses; frames; Midterm 2, Thu Oct 27, 7 - 9 pm, A109	
(9): Oct 30	Ch 6: (continued)	
(10): Nov 6	Ch 7: Forces in beams and cables	
(11): Nov 13	Ch 7 (continued):	
(12): Nov 20	Ch 8: Friction; Laws of friction; wedges; Thanksgiving break	
(13): Nov 27	Midterm 3, Mon Nov 28, 7 - 9 pm, A109 Ch 8: (continued)	
(14): Dec 4	Ch 9: Moments of inertia (moi); moi of areas; moi of a mass;	
(15): Dec 11	Ch 9: (continued)	
(16): Dec 18 Finals week	Comprehensive final exam Wed Dec 21 8 a.m. – 10 a.m., A109	